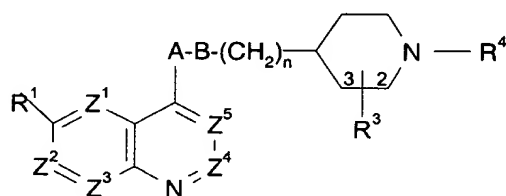


Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1 (Original). A method of treatment of bacterial infections in mammals, which method comprises the administration to a mammal in need of such treatment of an effective amount of a compound of formula (I) or a pharmaceutically acceptable derivative thereof:



(I)

wherein:

one of Z¹, Z², Z³, Z⁴ and Z⁵ is N or CR^{1a} and the remainder are CH;

R¹ is selected from hydroxy; (C₁₋₆) alkoxy optionally substituted by (C₁₋₆)alkoxy, amino, piperidyl, guanidino or amidino optionally N-substituted by one or two (C₁₋₆)alkyl, acyl or (C₁₋₆)alkylsulphonyl groups, NH₂CO, hydroxy, thiol, (C₁₋₆)alkylthio, heterocyclylthio, heterocycliloxy, arylthio, aryloxy, acylthio, acyloxy or (C₁₋₆)alkylsulphonyloxy; (C₁₋₆)alkoxy-substituted (C₁₋₆)alkyl; halogen; (C₁₋₆)alkyl; (C₁₋₆)alkylthio; trifluoromethyl; nitro; azido; acyl; acyloxy; acylthio; (C₁₋₆)alkylsulphonyl; (C₁₋₆)alkylsulphoxide; arylsulphonyl; arylsulphoxide or an amino, piperidyl, guanidino or amidino group optionally N-substituted by one or two (C₁₋₆)alkyl, acyl or (C₁₋₆)alkylsulphonyl groups, or when one of Z¹, Z², Z³, Z⁴ and Z⁵ is N, R¹ may instead be hydrogen;

R^{1a} is selected from hydrogen and the groups listed above for R¹;

R³ is in the 2- or 3-position and is:

carboxy; (C₁₋₆)alkoxycarbonyl; aminocarbonyl wherein the amino group is optionally substituted by hydroxy, (C₁₋₆)alkyl, hydroxy(C₁₋₆)alkyl, aminocarbonyl(C₁₋₆)alkyl, (C₂₋₆)alkenyl, (C₁₋₆)alkylsulphonyl, trifluoromethylsulphonyl, (C₁₋₆)alkenylsulphonyl, (C₁₋₆)alkoxycarbonyl, (C₁₋₆)alkylcarbonyl, (C₂₋₆)alkenyloxycarbonyl or (C₂₋₆)alkenylcarbonyl and optionally further substituted by (C₁₋₆)alkyl, hydroxy(C₁₋₆)alkyl, aminocarbonyl(C₁₋₆)alkyl or (C₂₋₆)alkenyl; cyano; tetrazolyl; 2-oxo-oxazolidinyl optionally substituted by R¹⁰; 3-hydroxy-3-cyclobutene-1,2-dione-4-yl; 2,4-thiazolidinedione-5-yl; tetrazol-5-ylaminocarbonyl; 1,2,4-triazol-5-yl optionally substituted by R¹⁰; or 5-oxo-1,2,4-oxadiazol-3-yl; or

R³ is in the 2- or 3-position and is (C₁₋₄)alkyl or ethenyl substituted with any of the groups listed above for R³ and 0 to 2 groups R¹² independently selected from:

thiol; halogen; (C₁₋₆)alkylthio; trifluoromethyl; azido; (C₁₋₆)alkoxycarbonyl; (C₁₋₆)alkylcarbonyl; (C₂₋₆)alkenyloxycarbonyl; (C₂₋₆)alkenylcarbonyl; hydroxy optionally substituted by (C₁₋₆)alkyl, (C₂₋₆)alkenyl, (C₁₋₆)alkoxycarbonyl, (C₁₋₆)alkylcarbonyl, (C₂₋₆)alkenyloxycarbonyl, (C₂₋₆)alkenylcarbonyl or aminocarbonyl wherein the amino group is optionally substituted by (C₁₋₆)alkyl, (C₂₋₆)alkenyl, (C₁₋₆)alkylcarbonyl or (C₂₋₆)alkenylcarbonyl; amino optionally mono- or disubstituted by (C₁₋₆)alkoxycarbonyl, (C₁₋₆)alkylcarbonyl, (C₂₋₆)alkenyloxycarbonyl, (C₂₋₆)alkenylcarbonyl, (C₁₋₆)alkyl, (C₂₋₆)alkenyl, (C₁₋₆)alkylsulphonyl, (C₂₋₆)alkenylsulphonyl or aminocarbonyl wherein the amino group is optionally substituted by (C₁₋₆)alkyl or (C₂₋₆)alkenyl; aminocarbonyl wherein the amino group is optionally substituted by (C₁₋₆)alkyl, hydroxy(C₁₋₆)alkyl, aminocarbonyl(C₁₋₆)alkyl, (C₂₋₆)alkenyl, (C₁₋₆)alkoxycarbonyl, (C₁₋₆)alkylcarbonyl, (C₂₋₆)alkenyloxycarbonyl or (C₂₋₆)alkenylcarbonyl and optionally further substituted by (C₁₋₆)alkyl, hydroxy(C₁₋₆)alkyl, aminocarbonyl(C₁₋₆)alkyl or (C₂₋₆)alkenyl; oxo; (C₁₋₆)alkylsulphonyl; (C₂₋₆)alkenylsulphonyl; or (C₁₋₆)aminosulphonyl wherein the amino group is optionally substituted by (C₁₋₆)alkyl or (C₂₋₆)alkenyl; provided that when R³ is disubstituted with hydroxy or amino and carboxy containing substituents these may optionally together form a cyclic ester or amide linkage, respectively;

and provided that R³ is other than (C₁₋₄)alkyl or ethenyl substituted by (C₁₋₆)alkoxycarbonyl or aminocarbonyl optionally substituted by (C₁₋₆)alkyl, (C₂₋₆)alkenyl, (C₁₋₆)alkoxycarbonyl, (C₁₋₆)alkylcarbonyl, (C₂₋₆)alkenyloxycarbonyl or (C₂₋₆)alkenylcarbonyl and optionally further substituted by (C₁₋₆)alkyl, hydroxy(C₁₋₆)alkyl, aminocarbonyl(C₁₋₆)alkyl or (C₂₋₆)alkenyl and 0 to 2 groups R¹²;

wherein R¹⁰ is selected from (C₁₋₄)alkyl; (C₂₋₄)alkenyl; aryl; a group R¹² as defined above; carboxy; aminocarbonyl wherein the amino group is optionally substituted by hydroxy, (C₁₋₆)alkyl, (C₂₋₆)alkenyl, (C₁₋₆)alkylsulphonyl, trifluoromethylsulphonyl, (C₁₋₆)alkenylsulphonyl, (C₁₋₆)alkoxycarbonyl, (C₁₋₆)alkylcarbonyl, (C₂₋₆)alkenyloxycarbonyl or (C₂₋₆)alkenylcarbonyl and optionally further substituted by (C₁₋₆)alkyl or (C₂₋₆)alkenyl; cyano; or tetrazolyl;

R⁴ is a group -CH₂-R⁵ in which R⁵ is selected from:

(C₃₋₁₂)alkyl; hydroxy(C₃₋₁₂)alkyl; (C₁₋₁₂)alkoxy(C₃₋₁₂)alkyl; (C₁₋₁₂)alkanoyloxy(C₃₋₁₂)alkyl; (C₃₋₆)cycloalkyl(C₃₋₁₂)alkyl; hydroxy-, (C₁₋₁₂)alkoxy- or (C₁₋₁₂)alkanoyloxy-(C₃₋₆)cycloalkyl(C₃₋₁₂)alkyl; cyano(C₃₋₁₂)alkyl; (C₂₋₁₂)alkenyl; (C₂₋₁₂)alkynyl; tetrahydrofuryl; mono- or di-(C₁₋₁₂)alkylamino(C₃₋₁₂)alkyl; acylamino(C₃₋₁₂)alkyl; (C₁₋₁₂)alkyl- or acyl-aminocarbonyl(C₃₋₁₂)alkyl; mono- or di- (C₁₋₁₂)alkylamino(hydroxy) (C₃₋₁₂)alkyl; optionally substituted phenyl(C₁₋₂)alkyl, phenoxy(C₁₋₂)alkyl or phenyl(hydroxy)(C₁₋₂)alkyl; optionally substituted diphenyl(C₁₋₂)alkyl; optionally substituted phenyl(C₂₋₃)alkenyl; optionally substituted benzoyl or benzoylmethyl; optionally substituted heteroaryl(C₁₋₂)alkyl; and optionally substituted heteroaroyl or heteroaroylmethyl;

n is 0, 1 or 2;

either A-B is NHC(O)NH or NHC(O)O, or

A is NR¹¹, O, S(O)_x or CR⁶R⁷ and B is NR¹¹, O, S(O)_x or CR⁸R⁹ where x is 0, 1 or 2 and wherein:

each of R⁶ and R⁷, R⁸ and R⁹ is independently selected from: H; thiol; (C₁₋₆)alkylthio; halo; trifluoromethyl; azido; (C₁₋₆)alkyl; (C₂₋₆)alkenyl; (C₁₋₆)alkoxycarbonyl; (C₁₋₆)alkylcarbonyl; (C₂₋₆)alkenyloxycarbonyl; (C₂₋₆)alkenylcarbonyl; hydroxy, amino or aminocarbonyl optionally substituted as for corresponding substituents in R³; (C₁₋₆)alkylsulphonyl; (C₂₋₆)alkenylsulphonyl; or (C₁₋₆)aminosulphonyl wherein the amino group is optionally substituted by (C₁₋₆)alkyl or (C₁₋₆)alkenyl;

or R⁶ and R⁸ together represent a bond and R⁷ and R⁹ are as above defined;

or R⁶ and R⁸ together represent -O- and R⁷ and R⁹ are both hydrogen;

or R⁶ and R⁷ or R⁸ and R⁹ together represent oxo;

and each R^{11} is independently H, trifluoromethyl, (C_{1-6}) alkyl, (C_{1-6}) alkenyl, (C_{1-6}) alkoxycarbonyl, (C_{1-6}) alkylcarbonyl, aminocarbonyl wherein the amino group is optionally substituted by (C_{1-6}) alkoxycarbonyl, (C_{1-6}) alkylcarbonyl, (C_{1-6}) alkenyloxy, (C_{2-6}) alkenylcarbonyl, (C_{1-6}) alkyl or (C_{1-6}) alkenyl and optionally further substituted by (C_{1-6}) alkyl or (C_{1-6}) alkenyl; provided that A and B cannot both be selected from NR^{11} , O and $S(O)_x$ and when one of A and B is CO the other is not CO, O or $S(O)_x$.

Claims 2-11. (Cancelled)

12. (Original) A pharmaceutical composition for use in the treatment of bacterial infections in mammals comprising a compound of formula (I) as defined in claim 1, or a pharmaceutically acceptable derivative thereof, and a pharmaceutically acceptable carrier.

13. (Cancelled)

14 (Previously Presented). A method according to claim 1 which comprises administering a compound of formula (IA) or a pharmaceutically acceptable derivative thereof which is a compound of formula (I) as defined in claim 1 wherein R^3 is other than (C_{1-6}) alkoxycarbonyl; optionally substituted aminocarbonyl, CN or COOH.

15 (Previously Presented). A method according to claim 1 which comprises administering a compound in which Z^5 is CH or N and Z^1 - Z^4 are each CH.

16 (Previously Presented). A method according to claim 1 which comprises administering a compound in which R^1 is methoxy, amino- or guanidino- (C_{3-5}) alkyloxy, guanidino- (C_{3-5}) alkyloxy, piperidyl- (C_{3-5}) alkyloxy, nitro or fluoro, and R^{1a} is hydrogen.

17 (Previously Presented). A method according to claim 1 which comprises administering a compound in which R^3 is in the 3-position and is CH_2CO_2H or 2-oxo-oxazolidinyl.

18 (Previously Presented). A method according to claim 1 which comprises administering a compound in which $AB(CH_2)_n$ is $(CH_2)_3$.

19 (Previously Presented). A method according to claim 1 which comprises administering a compound in which R⁴ is (C₅₋₁₀)alkyl, unsubstituted phenyl(C₂₋₃)alkyl or unsubstituted phenyl(C₃₋₄)alkenyl.

20 (Previously Presented). A method according to claim 1 which comprises administering a compound in which Z⁵ is CH or N and Z¹-Z⁴ are each CH; R¹ is methoxy, amino- or guanidino-(C₃₋₅)alkyloxy, guanidino(C₃₋₅)alkyloxy, piperidyl(C₃₋₅)alkyloxy, nitro or fluoro, and R^{1a} is hydrogen; R³ is in the 3-position and is CH₂CO₂H or 2-oxo-oxazolidinyl; AB(CH₂)_n is (CH₂)₃; and R⁴ is (C₅₋₁₀)alkyl, unsubstituted phenyl(C₂₋₃)alkyl or unsubstituted phenyl(C₃₋₄)alkenyl.

21 (Currently Amended). A method according to claim 1 which comprises administering a compound which is:

[3R, 4R]-1-Heptyl-3-(1-(R or S)-hydroxy-2-cyanoethyl)-4-[3-(6-methoxyquinolin-4-yl)propyl]piperidine;

[3R, 4R]-1-Heptyl-3-(2-(R or S)-oxo-oxazolidin-5-yl)-4-[3-(6-methoxyquinolin-4-yl)propyl] piperidine;

[3R, 4R]-1-Heptyl-3-(2-cyanoethyl)-4-[3-(6-methoxyquinolin-4-yl) propyl] piperidine;

[3R, 4R]-1-Heptyl-3-(3-carboxyethyl)-4-[3-(6-methoxyquinolin-4-yl) propyl] piperidine;

[3R, 4R]-1-Heptyl-3-carboxy-4-[3-(6-methoxyquinolin-4-yl) propyl] piperidine;

[3R, 4R]-1-Heptyl-3-(carboxymethyl)-4-[3-(6-methoxyquinolin-4-yl) propyl] piperidine;

[3R, 4R]-1-Heptyl-3-(1-(R or S)-hydroxy-2-carboxyethyl)-4-[3-(6-methoxyquinolin-4-yl)propyl]piperidine;

[3R, 4R]-1-Heptyl-3-(2-(E)-carboxyethenyl)-4-[3-(6-methoxyquinolin-4-yl)propyl]piperidine;

N-(cis-3-(R/S)-Ethoxycarbonyl-1-heptyl-4-(S/R)-piperidyl)-N'-(6-methoxyquinolin-4-yl)urea;

N-(cis-3-(R/S)-Ethoxycarbonyl-1-heptyl-4-(S/R)-piperidyl)-N'-(6-methoxy-[1,5]-naphthyridin-4-yl)urea;

N-(cis-3-(R/S)-Aminocarbonyl-1-heptyl-4-(S/R)-piperidyl)-N'-(6-methoxy-[1,5]-naphthyridin-4-yl)urea;

[3R, 4R]-1-Heptyl-4-[3-(R/S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-3-(2-(R or S)-oxo-oxazolidin-5-yl)-piperidine;

[3R, 4R]-1-Heptyl-3-cyanomethyl-4-[3-(R/S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]piperidine;

[3R, 4R]-1-Heptyl-3-cyanomethyl-4-(2-(R)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]piperidine;

N-(cis-3-(R/S)-Carboxy-1-heptyl-4-(S/R)-piperidyl)-N'-(6-methoxyquinolin-4-yl)urea;

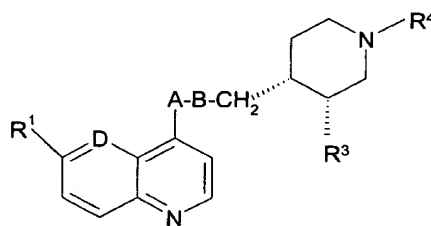
cis-3-(R/S)-Ethoxycarbonyl-1-heptyl-4-(S/R)-(6-methoxyquinolin-4-

yl)aminocarbonyl-oxypiperidine;

cis-3-(R/S)-Carboxy-1-heptyl-4-(S/R)-(6-methoxyquinolin-4-yl)aminocarbonyl-oxypiperidine;

a compound **of Examples 18 to -36** from Table 1 **as depicted below**;

TABLE 1



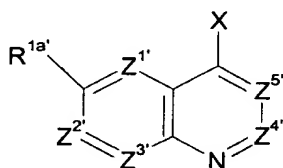
Example	A-B	n	R ¹	D	R ₃	R ₄
18	<u>CH₂CH₂</u>	1	<u>CH₃O</u>	<u>C</u>	<u>CH₂CN</u>	n-heptyl
19	<u>CH(NH₂)CH</u> 2	1	<u>CH₃O</u>	<u>C</u>	<u>CH₂CN</u>	n-heptyl
20	<u>CH₂CH₂</u>	1	<u>CH₃O</u>	<u>C</u>	<u>CH₂COOH</u>	5-methylhexyl
21	<u>CH(N₃)CH₂</u>	1	<u>CH₃O</u>	<u>C</u>	<u>CH₂CN</u>	n-heptyl
22	<u>CH₂CH₂</u>	1	<u>CH₃O</u>	<u>C</u>	<u>CONH₂</u>	n-heptyl
23	<u>CH₂CH₂</u>	1	<u>CH₃O</u>	<u>C</u>	<u>CH₂COOH</u>	n-hexyl
24	<u>CO.CH₂</u>	1	<u>CH₃O</u>	<u>C</u>	<u>CH₂CN</u>	n-heptyl
25	<u>CH₂CH₂</u>	1	<u>CH₃O</u>	<u>C</u>	<u>CH₂CH(CH₃)COOH</u>	n-heptyl
26	<u>CH₂CH₂</u>	1	<u>CH₃O</u>	<u>C</u>	<u>CH₂COOH</u>	cinnamyl
27	<u>CH₂CH₂</u>	1	<u>CH₃O</u>	<u>C</u>	<u>CH₂COOH</u>	3-phenylpropyl
28	<u>CH(OH)CH₂</u>	1	<u>CH₃O</u>	<u>C</u>	<u>CH₂COOH</u>	n-heptyl
29	<u>CH(NH₂)CH</u> 2	1	<u>CH₃O</u>	<u>C</u>	<u>CH₂COOH</u>	n-heptyl
30	<u>CH(OH)CH₂</u>	1	<u>CH₃O</u>	<u>C</u>	<u>CH(OH)COOH</u>	n-heptyl
31	<u>CO.CH₂</u>	1	<u>CH₃O</u>	<u>C</u>	<u>CH(OH)COOH</u>	n-heptyl

32	<u>CH₂CH(OH)</u>	1	<u>CH₃O</u>	<u>C</u>	<u>CH₂COOH</u>	<u>n-heptyl</u>
33	<u>NHCO</u>	1	<u>CH₃O</u>	<u>N</u>	<u>CH₂COOH</u>	<u>n-heptyl</u>
34	<u>CH₂CH₂</u>	1	<u>OH</u>	<u>C</u>	<u>CH₂COOH</u>	<u>n-heptyl</u>
35	<u>NHCOO</u>	0	<u>CH₃O</u>	<u>C</u>	<u>CONH₂</u>	<u>n-heptyl</u>
36	<u>oxirane</u>	1	<u>CH₃O</u>	<u>C</u>	<u>CH₂CN</u>	<u>n-heptyl</u>

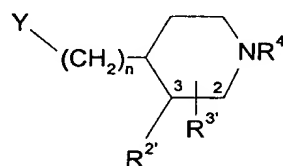
or a pharmaceutically acceptable derivative of any of the foregoing compounds.

22 (Currently Amended). A process for preparing compounds of formula (IA) as or a pharmaceutically acceptable derivative thereof, which is a compound of formula (I) as defined in claim 1, wherein R³ is other than (C₁₋₆)alkoxycarbonyl; optionally substituted aminocarbonyl, CN or COOH, or a pharmaceutically acceptable ester thereof, which process comprises:

(a) reacting a compound of formula (IV) with a compound of formula (V):



(IV)



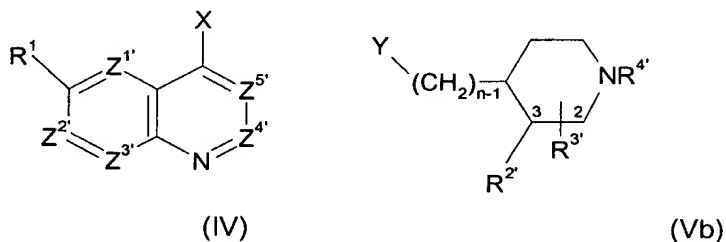
(V)

wherein Z¹, Z², Z³, Z⁴ and Z⁵, m, n, R¹, R², R³ and R⁴ are as defined in formula (I), and X and Y may be the following combinations:

- (i) X is M and Y is CH₂CO₂R^X
- (ii) X is CO₂R^Y and Y is CH₂CO₂R^X
- (iii) one of X and Y is CH=SPh₂ and the other is CHO
- (iv) X is CH₃ and Y is CHO
- (v) X is CH₃ and Y is CO₂R^X
- (vi) X is CH₂CO₂R^Y and Y is CO₂R^X
- (vii) X is CH=PR^{Z₃} and Y is CHO
- (viii) X is CHO and Y is CH=PR^{Z₃}
- (ix) X is halogen and Y is CH=CH₂
- (x) one of X and Y is COW and the other is NHR^{11'}
- (xi) one of X and Y is (CH₂)_p-V and the other is (CH₂)_qNHR^{11'}, (CH₂)_qOH, (CH₂)_qSH or (CH₂)_qSCOR^X where p+q=1
- (xii) one of X and Y is CHO and the other is NHR^{11'}

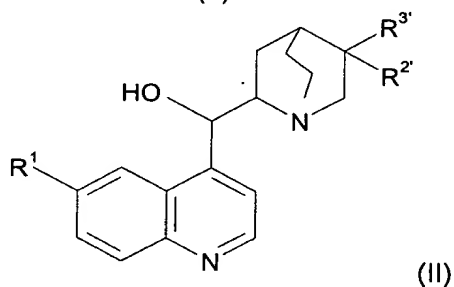
- (xiii) one of X and Y is OH and the other is $-\text{CH}=\text{N}_2$
in which V and W are leaving groups, R^x and R^y are (C_{1-6}) alkyl and R^z is aryl or (C_{1-6}) alkyl, or
(xiv) X is NCO, Y is OH or NH_2 ;

(b) reacting a compound of formula (IV) with a compound of formula (Vb):



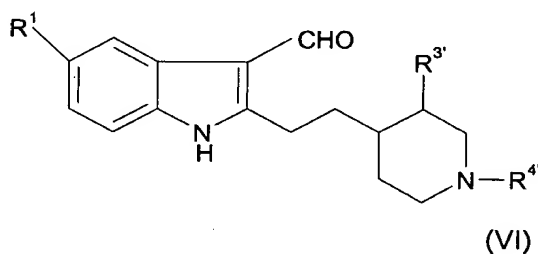
wherein $\text{Z}^1, \text{Z}^2, \text{Z}^3, \text{Z}^4$ and Z^5 , m, n, $\text{R}^1, \text{R}^2, \text{R}^3$ and R^4 are as defined in formula (I), X is $\text{CH}_2\text{NHR}^{11'}$ and Y is CHO or COW or X is CH_2OH and Y is $-\text{CH}=\text{N}_2$;

(c) rearranging a compound of formula (II):



to give a compound of formula (III) which is a compound of formula (I) where $\text{Z}^1\text{-Z}^5$ are CH, n is 1, A-B is COCH_2 and R^2 is H, or a compound of formula (VII) which is a compound of formula (I) where n is 1, A-B is CHOHCH_2 or CH_2CHOH and R^2 is H; or

(d) photooxygenating a compound of formula (VI):



in which $Z^{1'}-Z^{5'}$ are Z^1-Z^5 or groups convertible thereto, $R^{11'}$, $R^{1'}$, $R^{2'}$, $R^{3'}$ and $R^{4'}$ are R^{11} , R^1 , R^2 , R^3 and R^4 or groups convertible thereto, and thereafter optionally or as necessary converting $R^{11'}$, $R^{1'}$, $R^{2'}$, $R^{3'}$ and $R^{4'}$ to R^{11} , R^1 , R^2 , R^3 and R^4 , converting $Z^{1'}-Z^{5'}$ to Z^1-Z^5 , converting A-B to other A-B, interconverting R^{11} , R^1 , R^2 , R^3 and/or R^4 and forming a pharmaceutically acceptable derivative thereof.

23 (Previously Presented). A pharmaceutical composition comprising a compound of formula (IA) or a pharmaceutically acceptable derivative thereof which is a compound of formula (I) as defined in claim 1 wherein R^3 is other than (C₁₋₆)alkoxycarbonyl; optionally substituted aminocarbonyl, CN or COOH, or a pharmaceutically acceptable derivative thereof, and a pharmaceutically acceptable carrier.

24. (Cancelled)